Massachusetts Institute of Technology v. United States, No. 00-292 C (United States Court of Federal Claims, filed May 22, 2000)

IN THE UNITED STATES COURT OF FEDERAL CLAIMS

MASSACHUSETTS INSTITUTE OF TECHNOLO Plaintiff	GY)	00-292	C
v.)	No	
THE UNITED STATES Defendant)		
Dolondan)	FILED MAY	2 2 2000

SUMMARY OF COMPLAINT

The Massachusetts Institute of Technology ("MIT") has been licensed since 1958, by the Nuclear Regulatory Commission ("NRC"), or its predecessor agency, the Atomic Energy Commission ("AEC"), to operate a nuclear reactor ("the MIT reactor") in Cambridge, Massachusetts, for research, including medical research.

Between 1960 and 1962, the Massachusetts General Hospital ("MGH") and its chief of neurosurgery, Dr. William Sweet, attempted to develop a treatment for glioblastoma multiforme, a then incurable and still incurable form of brain cancer. The treatment known as boron neutron capture therapy was based upon the two properties of boron, one chemical and the other nuclear. The first property was that boron when injected properly into a person with brain cancer concentrates disproportionately in brain tumor cells. The second property was that when the nucleus of a boron atom captures a free neutron, an atomic reaction occurs that releases an alpha particle that can kill cells, including cancer cells.

The atomic reaction portion of Dr. Sweet's and MGH's medical trials took place at the MIT reactor. During these medical trials, 18 patients were irradiated by using the MIT reactor as the neutron source for boron neutron capture therapy. The trials failed and the patients died.

In 1995, MIT, along with MGH and Dr. Sweet, was sued in the United States District Court for these 1960-1962 medical trials. MIT requested the United States to defend it under a written indemnity issued under the Price-Anderson Act. The United States refused and MIT now seeks to enforce this agreement in the Court of Federal Claims and to obtain declaratory relief regarding any future claims.

COMPLAINT

The Plaintiff, MIT, alleges that:

- It is a private non-profit educational institution incorporated under the laws of the Commonwealth of Massachusetts with its principal offices in Cambridge, Massachusetts.
- 2. At all times material to this complaint, it was a party to a written indemnity contract that it entered into with the United States through the AEC, an agency of the United States duly authorized by act of Congress to bind the United States.
- 3. This indemnity agreement entitled MIT to indemnification from the United States for reasonable costs it has incurred in defending public liability claims asserted against it arising out of any nuclear incident which occurred at the MIT reactor.
- 4. This Court has jurisdiction under 28 U.S.C. §1491, in that this action is founded upon an express contract with the United States. This Court has jurisdiction to award declaratory relief as requested under 28 U.S.C. §2201.

BACKGROUND

- 5. In 1954, Congress ended the government monopoly on nuclear materials, by enacting the Atomic Energy Act of 1954 (codified as amended at 42 U.S.C. §§2011-2281) ("the Act").
- 6. The purpose of the Act was "to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes" by allowing private entities to obtain licenses to possess nuclear materials and operate nuclear reactors.
- 7. In particular, Section 104(a) of the Act (42 U.S.C. §2134(a)) authorized the AEC "to issue licenses to persons applying for utilization facilities for use in medical therapy."
- 8. In 1956, MIT submitted an application to the AEC for a license to construct and operate a nuclear research reactor facility.

- 9. The MIT application to the AEC sought a license that would allow it to operate a nuclear reactor for both general research (42 U.S.C. §2134(c)) and for medical therapy applications (42 U.S.C. §2134(a)).
- 10. In the materials MIT submitted to the AEC in 1956, in support of its application, MIT specifically noted that one of the most important intended uses of the MIT reactor was to treat cancer patients: "The neutron beam will be utilized in several different ways. Its most important use will be as a thermal neutron source for studies of cancer treatment in human patients."

THE PRICE-ANDERSON ACT

- In 1957, as the result of the unavailability of insurance from the private sector to insure the financial protections that Congress had required from persons seeking to be licensed as nuclear reactor operators, Congress passed the Price-Anderson Act ("Price-Anderson") (Title 42 U.S.C. §2011, et seq.).
- 12. Price-Anderson mandated that the AEC provide a federal indemnity holding any nuclear reactor operator harmless from "public liability arising from nuclear incidents which is in excess of the level of financial protection required of the licensee." 42 U.S.C. §2210(c).
- 13. The financial protection (i.e., private insurance) that Price-Anderson required the licensee to maintain was limited to the first \$250,000 of public liability defense and indemnity costs. The federal indemnity covered all public liability defense and indemnity costs above that amount up to a maximum liability capped at five hundred million dollars (\$500,000,000). 42 U.S.C. §§2210(a) and (c).
- 14. On or about June 9, 1958, MIT was issued License No. R-37 (the "License") by the AEC. This License, subject to various amendments, continues in force today.

- 15. The License authorized MIT to operate its nuclear reactor for medical research pursuant to section 104(a) of the Act and for general research pursuant to section 104(c) of the same Act.
- 16. In its findings in favor of issuing a license to MIT, the AEC specifically found that: "MIT has submitted data describing the control and safety instrumentation and the administrative procedures relating to the use of the facility for neutron beam therapy experiments and medical therapy. The ... procedures appear to provide adequate protection for the health and safety of the public and personnel participating in the use of the facility for these purposes."
- 17. On or about May 25, 1959, the AEC and MIT entered into an indemnification agreement "with respect to such public liability as arises out of or in connection with the activity licensed under AEC License No. R-37." This interim agreement was to "[constitute] the agreement of indemnification contemplated by subsection 170k of the Act, as amended." (A copy of this interim agreement is attached hereto and incorporated herein by reference as Exhibit A.)
- 18. Subsequently, MIT entered into a final Indemnification Agreement No. E-39, with the AEC (A copy of this agreement is attached hereto and incorporated herein by reference as Exhibit B.) that specifically provided:

The Commission undertakes and agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability.

Article III, paragraph 1.

19. The Indemnification Agreement also provided for the indemnification from the "reasonable costs of investigating, settling and defending claims for public liability." Article III, paragraph 3.

THE 1960-1962 BORON NEUTRON CAPTURE THERAPY TRIALS AT MIT

- 20. In October of 1960, Dr. William Sweet, of the MGH, began a series of clinical trials at the MIT reactor using an experimental treatment known as boron neutron capture therapy on persons suffering from a glioblastoma multiforme.
- 21. Glioblastoma multiforme was (and is) an incurable form of brain cancer. The life expectancy of persons diagnosed with this disease was only 4-6 months. If the person's tumor was resectioned by surgery their life expectancy was still only 8-10 months.
- 22. Boron neutron capture therapy ("BNCT") offered a theoretical treatment for this disease based upon the atomic properties of boron.
- 23. It was known as early as 1936, that boron was absorbed by brain tumor cells as opposed to normal brain cells at a differential rate of 4 to 1. The development of experimental boron compounds in the 1950's had raised this differential to almost 10 to 1.
- 24. It was also known that boron atoms when placed in a neutron beam would capture free neutrons in their atomic nuclei that would inevitably result in an atomic reaction.
- 25. The atomic reaction caused the boron atom to fission into a lithium atom while simultaneously emitting an energized alpha particle.
- 26. Alpha particles, which consist of the nucleus of a helium atom stripped of its electrons, are usually not dangerous when encountered naturally since they cannot penetrate a piece of paper or human skin.
- 27. However, when alpha particles are generated within an organism, they travel only 4 millionths of an inch but are highly lethal to any living cells that exist immediately adjacent to their point of origin.

- 28. An AEC-funded reactor at the Brookhaven National Laboratories ("Brookhaven") in New York, began experimental trials on BNCT as early as 1951, although the reactor at Brookhaven used initially was not designed, or especially well suited, for nuclear medical therapy.
- 29. The BNCT trials at MIT between 1960 and 1962, sought to improve upon the poor BNCT results at Brookhaven by using a nuclear reactor that was specifically designed for nuclear medical therapy.
- 30. During the trials, glioblastoma multiforme patients were ambulanced to the MIT reactor. At a medical therapy room underneath the reactor, the MGH medical team injected the patients with boron compounds that were absorbed by their tumors. After a short time, the patients' skulls were opened by surgery to allow their tumors to be exposed to a neutron beam from the reactor. The resulting atomic reaction was intended to kill their tumor cells when the boron atoms captured neutrons from the flux generated by the reactor.
- 31. The trials ended when Dr. Sweet discovered that the actual radiation dosages that patients had been receiving were much higher than calculated.
- 32. Eventually, Dr. Sweet concluded that the trials did not generate any medically significant extension of the life expectancy of the patients as a result of receiving BNCT and in some cases may have, in fact, shortened their lives.
- 33. Subsequent analysis of the autopsy data of the patients revealed that the investigators had not considered that a portion of the brain's capillaries would retain significant fractions of residual boron even though the boron compounds used had been absorbed by tumor and normal cells at the expected favorable differential rate.

- 34. The analysis further showed that this boron fraction in the brain's blood supply, coupled with the actual radiation dosages patients received, had caused radiation necrosis by emitting alpha particles that destroyed the brain's blood vessels.
- 35. At all times material to this complaint, the 1960-1962 BNCT clinical trials at MIT, involved use of "source, special nuclear, or by-product material", as those terms are used in 42 U.S.C. §2014(q)(aa).
- 36. At all times material to this complaint, the 1960-1962 BNCT clinical trials at MIT, arose out of or resulted from the radioactive, toxic or hazardous properties of the radioactive material that MIT used pursuant to its license from the AEC.

THE HEINRICH V. SWEET CIVIL ACTION

- 37. In 1995, the President's Advisory Commission on Human Radiation Experiments issued a report on government sponsored and endorsed radiation experiments involving knowing and unknowing human subjects ("The ACHRE Report").
- 38. Although the report did not discuss the MIT BNCT trials of 1960-1962, on September 21, 1995, a civil action was filed against MIT, and several other defendants, in the United States District Court for the Eastern District of New York (hereinafter, *Heinrich v. Sweet*).
- 39. This action was brought by the representatives of four of the estates of patients who had died after receiving BNCT at MIT and Brookhaven.
- 40. The defendants were MIT, Dr. Sweet, MGH, Associated Universities, Inc., which was the contract operator of the Brookhaven National Laboratories, the estates of the medical directors of Brookhaven National Laboratories, and the United States of America.

- 41. The complaint alleged a number of state and federal causes of action arising out of and relating to the bodily injury, sickness and death resulting from the radiation that the patients treated at MIT and Brookhaven had suffered.
- 42. On or about October 31, 1995, MIT duly notified Mutual Atomic Energy Underwriters (MAELU), its insurance carrier, for the first \$250,000 deductible required under the Price-Anderson Act of the pendency of *Heinrich v. Sweet*.
- 43. On or about November 8, 1995, MIT duly notified the NRC, the federal agency that had succeeded to the responsibilities of the AEC under 42 U.S.C. §2210, of the *Heinrich v. Sweet* claim and its responsibilities under Indemnity Agreement No. E-39. (A copy of this notice is attached hereto as Exhibit C.)
- 44. On February 16, 1996, the NRC requested additional information that was duly provided by MIT.
- 45. On August 29, 1996, the NRC denied MIT's request for indemnity. (A copy of this denial is attached hereto and incorporated herein as Exhibit D.)
- 46. On or about September 19, 1996, MAELU accepted the defense of MIT under a reservation of rights. (A copy of this acceptance is attached hereto and incorporated herein by reference as Exhibit E.)
- 47. In 1998, pursuant to Title 28, Section 1406(a), *Heinrich v. Sweet* was transferred to the United States District Court in Boston, Massachusetts.
- 48. In March 1999, the legal costs of MIT in defending *Heinrich v. Sweet* exhausted the first \$250,000 of coverage provided by MAELU for licensed research reactors operated by non-profit educational institutions.

- 49. On March 26, 1999, MIT again tendered its defense of *Heinrich v. Sweet* to the NRC under Indemnity Agreement No. E-39. (A copy of this second tender is attached hereto and incorporated herein by reference as Exhibit F.)
- 50. The NRC declined the tender and refused to take over the defense of the claims on May 4, 1999. (A copy of this denial is attached hereto and incorporated herein by reference as Exhibit G.)
- 51. On August 28, 1999, after the District Court ruled that the federal cause of action amendments of Price-Anderson governed the dispute among the non-governmental parties, *Heinrich v. Sweet*, 62 F.Supp. 2d 282, 298-99 (1999), MIT again requested the NRC to honor its indemnity. (A copy of this request is attached hereto and incorporated herein as Exhibit H.)
- 52. The NRC made no reply to this request.
- 53. A jury was impaneled on September 8, 1999 and the taking of evidence commenced on September 15, 1999. After twenty days of trial and five days of deliberation, the jury reached a verdict on October 15, 1999.
- 54. The jury found no liability against MIT. However, the jury did render a verdict against Dr. Sweet and MGH for compensatory and punitive damages in the amount of \$8,000,000.
- 55. Upon information and belief, subsequent to the verdict, as a result of the attendant publicity, two additional plaintiffs have come forward and, in all likelihood will commence additional actions against some or all of the defendants who were sued in *Heinrich v. Sweet*.

- 56. MIT has incurred and may still incur substantial defense costs that the United States is obligated to pay under Indemnity Agreement No. E-39.
- 57. The reasonable costs incurred in defending MIT, including attorneys' fees, expert witness fees, and other expenses are presently in excess of one million (\$1,000,000) dollars.
- 58. The United States, after due demand, has in breach of its contract with MIT, failed to indemnify MIT for the reasonable costs it incurred in investigating and defending *Heinrich v. Sweet.*

COUNT I - CONTRACTUAL INDEMNITY

- 59. MIT hereby repeats and re-alleges the matters set forth in paragraphs 1 through 58 as if fully set forth herein.
- 60. The United States is liable, under Indemnity Agreement No. E-39, to pay MIT its reasonable costs of investigating and defending the claims asserted in *Heinrich v. Sweet*.
- 61. The United States' failure to pay MIT under Indemnity Agreement No. E-39 has caused and continues to cause damage to MIT.

COUNT II - DECLARATORY JUDGMENT

- 62. MIT hereby repeats and re-alleges the matters set forth in paragraphs 1 through 61 as if fully set forth herein.
- 63. An actual controversy has arisen between MIT and the United States as to the United States' obligation under Indemnity Agreement No. E-39 to indemnify MIT against the reasonable costs of investigating and defending any future claims for public liability arising out of BNCT clinical trials.

WHEREFORE, MIT prays that this Court enter judgment:

C. Awarding MIT as damages its reasonable costs of investigating and defending the

claims asserted in Heinrich v. Sweet:

D. Awarding MIT interest as allowed by law on the amount determined to be owing;

E. Declaring the rights and liabilities of the parties under Indemnity Agreement No.

E-39, and more particularly, declaring that the United States is obligated to indemnify

MIT against the reasonable costs of investigating and defending the claims asserted in

Heinrich v. Sweet and is obligated to indemnify MIT against any future public

liability arising out of the BNCT clinical trials; and

F. Awarding MIT such other and further relief as is lawful and proper.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY,

By its attorneys,

Owen Gallagher (BBO #183420

GALLAGHER & GALLAGHER, P.C.

120 2nd Avenue Boston, MA 02129

617-598-3800

Dated: May ____, 2000

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EXHIBIT A



UNITED STATES ATOMIC ENERGY CCMMISSION WASHINGTON 25, D. C.



Docket No. 50-20

25 1959

Massachusetts Institute of Technology Cambridge 30, Massachusetts

Attention: Mr. James McCormack

Vice President

Gentlemen:

The Commission hereby agrees to indemnify and hold harmless

Massachusetts Institute of Technology

and other persons indemnified as their interests may appear, from public liability in excess of \$250,000 arising from nuclear incidents provided that with respect to any nuclear incident occurring between 12:01 a.m. June 9, 1958 and 12:01 a.m. August 23, 1958 inclusive the level of finencial protection required of you under License No. 3-37 shall be \$250,000. The appregate indemity for all persons indemified in connection with each nuclear incident shall not exceed \$500,000,000 including the reasonable costs of investigating and settling claims and defending suits for damage. The obligations of the Commission under this agreement shall apply only with respect to such public liability as arises out of or in connection with the activity licensed under ASC License No. R-37. The terms "persons indemnified," "public liability," and "muclear incident," as used in this paragraph have the mesnings defined in Section 11 of the Atomic Energy Act of 1954, as smended. This agreement is effective as of June 9, 1958.

This agreement will be superseded, in due course, by the execution and issuance of a formal indemnity agreement between you and the Commission containing such provisions as are required by law and such additional provisions as may be incorporated therein by the Commission pursuant to its regulations, which formal agreement will be effective, and will supersede this agreement, as of the effective date referred to above. Until this agreement has been so superseded, it is understood that this agreement constitutes the agreement of indemnification contemplated by subsection 170k of the Atomic Energy Act of 1954, as amended.

By your acceptance of this agreement, you agree to pay to the Commission the see provided for by Section 140.17 (b) of the Commission's regulations, in accordance with billing instructions received by the Commission.

U. S. ATOMIC EMERCI COMMISSION

Director

Division of Licensing and Regulation

EXHIBIT B



united states ATOMIC ENERGY COMMISSION

WASHINGTON 25, D.C.



Indemnity
Agreement E-39
No.

This indemitty agreement No. E-39 is entered between Massachusetts Institute of Technology

is entered into by and

(hereinafter referred to as the "licensee") and the United States Atomic Energy Commission (hereinafter referred to as the "Commission") pursuant to subsection 170k of the Atomic Energy Act of 1954, as amended (hereinafter referred to as "the Act").

ARTICLE I

As used in this agreement, 1. "Mudlear reactor", "byproduct material", "person", "source material", and "special nuclear material" shall have the meanings given them in the Atomic Energy Act of 1954, as amended, and the regulations issued by the Commission.

- 2(a) "Muchar incident" means any occurrence or series of occurrence at the location or in the course of transportation causing bodily injury sickness, disease, or death, or loss of or desage to property, or loss or use of property; arising out of or resulting from the radioactive, toxic explosive, or other hazardous properties of the radioactive material.
- (b) Any odcurrence or series of occurrences causing bodily injuly, sickness, disease or death, or loss of or damage to property, or loss of use of property; arising out of or resulting from the radioactive, toxic explosive, or other hazardous properties of
 - i. The radioactive material discharged or dispersed from the location over a period of days, weeks, months or longer and also arising out of such properties of other material defined as "the radioactive material" in any other agreement or agreements entered into by the Commission under subsection 170 e or k of the Act and so discharged or dispersed from "the location" as defined in any such other agreement; or
 - ii. The radioactive material in the course of transportation and also stising out of such properties of other material defined in any other agreement entered into by the Commission pursuant to subsection 170 c or k of the Act as "the radioactive material" and which is in the course of transportation

1

shall be deemed to be a common occurrence. A common occurrence shall be deemed to constitute a single nuclear incident.

- 3. "In the course of transportation" means in the course of transportation within the United States, including handling or temporary storage incidental thereto, of the radioactive material to the location or from the location provided that:
- (a) With respect to transportation of the radioactive material to the location, such thensportation is not by pre-determination to be interrupted by the removal of the material from the transporting conveyance for any purpose other than the continuation of such transportation to the location or temporary storing incidental thereto;
- (b) The transportation of the radioactive material from the location shall be deemed to end when the radioactive material is removed from the transporting conveyance for any purpose other than the continuation of transportation or temporary storage incidental thereto;
- (c) "In the course of transportation" as used in this agreement shall not include transportation of the radioactive material to the location if the material is also "in the course of transportation" from any other "location" as defined in any other agreement entered into by the Commission pursuant to subsection 170 c or k of the Act.
- '4. "Person indefinified" means the licensee and any other person who may be liable for public liability.
- 5. During the period 12:01 A.H., June 9, 1958 to 12:01 A.H., September 6, 1961, inclusive:

"Public liability" means any legal liability arising out of or resulting from a nuclear incident, except (1) claims under state of Yederal Workmen's Compensation Acts of employees of persons indemnified who are employed (2) at the location or, if the nuclear incident occurs in the course of transportation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use, or transfer of the radioactive material; and (2) claims arising but of an act of war.

From 12:01 A.H., September 6, 1961:

"Fublic liability" means any legal liability arising out of or resulting from a nuclear incident, except (1) claims under state of Federal Workmen's Compinsation Acts of employees of persons indemnified who are employed (a) at the location or, if the nuclear incident occurs in the course of transfortation of the radioactive material, on the transporting vehicle, and (b) in connection with the licensee's possession, use, or transfer of the radioactive material; (2) claims arising out of an act of war; and (3) claims for loss of, or damage to, or loss of use of (a) property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material, and (b), if the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle, containers used in such transportation, and the radioactive material.

- 6. "The location" means the location described in Item 3 of the Attachment hereto.
- 7. "The radioactive material" means source, special nuclear, and byproduct material which (1) is used or to be used in, or is irradiated or to be irradiated by, the nuclear reactor or reactors subject to the lidense or licenses designated in the Attachment hereto, or (2) is produced as the result of operation of said reactor(s).
- 8. "United States" when used in a geographical sense includes all Territories and possessions of the United States; the Canal Zone and Puerto Rico.

ARTICLE II

Any obligations of the licensee under subsection 53e(8) of the Act to indemnify the United States and the Commission from public list bility shall not in the aggregate exceed \$250,000 with respect to any nuclear incident.

ARTICLE III

- 1. The Commission undertakes and agrees to indemnify and hold harmless the licenses and other persons indemnified, as their interest may appear, from public liability.
- 2. With respect to damage caused by a nuclear incident to property of any person legally liable for the nuclear incident; the Commission agrees to pay to such person those sums which such person would keep been obligated to pay if such property had belonged to another; provided, that the obligation of the Commission under this paragraph 2 does not apply with respect to:
- (a) Property which is located at the location and used in connection with the licensee's possession, use, or transfer of the radioactive material;
- (b) Property damage due to the magistr of the person indemnified to use all reasonable means to save and preserve the property after knowledge of a nuclear incident;
- (c) If the nuclear incident occurs in the course of transportation of the radioactive material, the transporting vehicle and containers used in such transportation!
 - (d) The radioactive material.

- 3. The Commission agrees to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from the resionable costs of investigating, sattling and defending claims for public liability.
- 4. (a) The obligations of the Commission under this Article shall apply only with respect to such public liability, such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) and such reasonable costs described in paragraph 3 of this Article as in the aggregate exceed \$250,000.
- (b) With respect to a common occurrence, the obligations of the Commission under this Article shall apply only with respect to such public liability, such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) and to such reasonable costs described in paragraph 3 of this Article as in the aggregate exceed whichever of the following is lower: (1) the sum of the amounts of financial protection established under all applicable agreements; or (2) \$60,000,000. Lection established under all applicable agreements means each agreement As used in this paragraph, "applicable agreements" means each agreement entered into by the Commission pursuant to subsection 170c of the Act in which agreement the nuclear incident is defined as a "common occurrence."
- 5. The obligations of the Commission under this agreement shall apply only with respect to nuclear incidents occurring during the term of this agreement.
- 6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not in the aggregate exceed \$500,000,000 with respect to any nuclear incident.
- 7. If the licensee is immune from public liability because it is a state agency, the Commission shall make payments under this agreement in the same manner and to the same extent as the Commission would be required to do if the licensee were not such a state agency.
- 8. The obligations of the Commission under this Article, except to the licensee for demage to property of the licensee, shall not be affected by any failure on the part of the licensee to fulfill its obligations under this agreement. Bankruptcy or insolvency of the licensee or any other person indemnified or of the estate of the licensee or any other person indemnified shall not relieve the Commission of any of its obligations hereunder.

ARTICLE IV

- 1. When the Commission determines that the United States will probably be required, to make indemnity payments under the provisions of this agreement, the Commission shall have the right to collaborate with the licensee and other persons indemnified in the settlement and defense of any claim and shall have the right (a) to require the prior approval of the Commission for the settlement or payment of any claim or action asserted against the licensee or other person indemnified for public liability or damage to property of persons legally liable for the nuclear incident which claim or action the licensee or the Commission may be required to indemnify under this agreement; and (b) to appear through the Attorney General of the United States on behalf of the licensee or other person indemnified, take charge of such action and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by the Commission, the licensee shall furnish all reasonable assistance in effecting a settlement or asserting a defense.
- 2. Neither this agreement nor any interest therein nor claim thereunder may be assigned or transferred without the approval of the Commission.

ARTICLE V

The parties agree that they will enter into appropriate amendments of this agreement to the extent that such amendments are required pursuant to the Atomic Energy Act of 1954, as amended, or licenses, regulations or orders of the Commission.

ARTICLE VI

The licensee agrees to pay to the Commission such fees as are established by the Commission pursuant to regulations or orders of the Commission.

ARTICLE VII

The term of this agreement shall commence as of the date and time specified in Item 4 of the Attachment and shall terminate at the time of expiration of that license specified in Item 2 of the Attachment, which is the last to expire; provided that, except as may otherwise be provided in applicable regulations or orders of the Commission, the term of this

agreement shall not terminate until all the radioactive material has been removed from the location and transportation of the radioactive material from the location has anded as defined in subparagraph 3(b), Article I. Termination of the term of this agreement shall not affect any obligation of the licensee or any obligation of the Commission under this agreement with respect to any nuclear incident occurring during the term of this agreement.

UNITED STATES ATOMIC EMERGY COMMISSION

Indemnity Agreement No. E-39

ATTACHMENT

Item 1 - Licensee

Massachusetts Institute of Technology

Address

Cambridge 39, Massachusetts

Item 2 - License number or numbers

R-37

Item 3 - Location

The Reactor Building with stack and cooling towers including the area circumscribed by a chain link fence on the north and south sides of said building; a concrete wall and chain link fence on the east side of said building; and a line coinciding with the east wall of the Muclear Engineering Building (Room NW12). Also, that portion of the Nuclear Engineering Building north of the partition extending from the southeast corner of the Transformer Yault (Room 123) to the southwest corner of the Spectrometer Set-up Room (Room 119); and, the fuel storage vault rooms identified as NW12-127, NW12-213 and NW12-313 and the connecting cofridors and the elevator when nuclear fuels are being moved to and from the vaults and the areas first mentioned. The location is further depicted on the two prints, "Building NW12 and Reactor," dated May 1, 1964 and transmitted with the Institute's letter of Hay 7, 1964. Said prints are made part of this indemnity agreement by reference.

The above location is a portion of the facilities commonly known as 120 through 138 Albany Street, Cambridge, Massachusetts.

Item 4 " The indemnity agreement designated above, of which this Attachment is a part, is effective as of 12:01 A.H., on the 9th day of June, 1958 and supersedes the interim indemnity agreement between the licensee and the Atomic Energy Commission dated May 25, 1959.

> FOR THE UNITED STATES ATOMIC ENERGY COMMISSION Eber R. Price, Director Division of State and Licensee Relations

For the HASSACHUSETTS INSTITUTE OF TECHNOLOGY

(Name of Licensee)

By Ict. Ellediench Paul V. Cusick

Dated at Bethesda, Maryland, the 1370

AMENDMENT TO INDEMNITY AGREEMENT NO. E-39

AMENDMENT NO. 1

Effective January 1, 1966, Indemnity Agreement No. E-39, between Massachusetts Institute of Technology and the Atomic Energy Commission dated May 13, 1964, is hereby amended as follows:

Paragraph 4(b) of Article III is amended to read as follows:

(b) With respect to a common occurrence, the obligations of the Commission under this Article shall apply only with respect to such public liability, such damage to property of persons legally liable for the nuclear incident (other than such property described in the proviso to paragraph 2 of this Article) and to such reasonable costs described in paragraph 3 of this Article as in the aggregate exceed whichever of the following is lower:
(1) the sum of the amounts of financial protection established under all applicable agreements; or (2) \$74,000,000. As used in this Article, "applicable agreements" means each agreement entered into by the Commission pursuant to subsection 170c of the Act in which agreement the nuclear incident is defined as a "common occurrence."

Paragraph 6 of Article III is amended to read as follows:

6. The obligations of the Commission under this and all other agreements and contracts to which the Commission is a party shall not, with respect to any nuclear incident, in the aggregate exceed whichever of the following is the lower: (a) \$500,000,000 or (b) with respect to a common occurrence, \$560,000,000 less the sum of the amounts of financial protection established under all applicable agreements.

FOR THE UNITED STATES ATOMIC ENERGY COMMISSION

Eber R. Price, Director
Division of State and Licensee Relations

Accepted SEP 6.1966 . 19

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Paul V. Cusick, Comptroller

EXHIBIT C

PALMER & DODGE

One Beacon Street
Boston, Massachusetts 02108

Francis C. Lynch (617) 573-0320 flynch@palmerdodge.com

Telephone: (617) 573-0100 Facsimile: (617) 227-4420

November 8, 1995

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Director of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission 11545 Rockville Pike Rockville, MD 20852

Re:

Heinrich, et al. v. Sweet, et al.

United States District Court for the Eastern District of New York

Civil Action No. CV 95-3845

Dear Sir/Madam:

This letter constitutes notice of a claim against the Massachusetts Institute of Technology ("MIT") that is subject to indemnification under Indemnity Agreement E-39 between the Atomic Energy Commission and MIT and, perhaps, additional agreements that pertained to the treatments at Brookhaven National Laboratory. Enclosed is a copy of the Complaint above-referenced lawsuit.

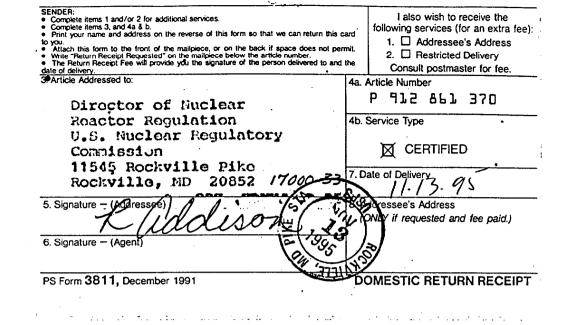
Please call me if you have any questions concerning this matter.

Very truly yours,

Francis C. Lynch

FCL:mee Enclosure

cc: Mr. Thomas R. Henneberry



Py Flynch

RETURN RECEIPT SERVICE SENT TO:	POSTAGE SHOW TO VHOM, DATE AND / RESTRICTED ADDRESS OF DELIVERY DELIVERY CERTIFIED FEE - RETURN RECEIPT TOTAL POSTAGE AND FEES NO INSURANCE COVERAGE PROVIDED — NOT FOR INTERNATIONAL MAIL	WOLSO OF ENVELOPE TO
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EXHIBIT D



UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D.C. 20555-0001

August 29, 1996

Francis C. Lynch, Esq.
Palmer & Dodge LLP
One Beacon Street
Boston, MA 02108-3190

Re: Heinrich v. Sweet, No. CV95-3845(DRH) (E.D.N.Y. filed September 26, 1995)

Dear Fran:

We have reviewed your May 29, 1996, response to my February 16 request for the reasoning underlying your contention that the Nuclear Regulatory Commission (NRC) is bound to indemnify Massachusetts Institute of Technology (MIT) in connection with the lawsuit *Heinrich v. Sweet*. After review of the relevant statutes along with their legislative histories and consideration of the facts underlying *Heinrich*, we remain firm in our opinion that NRC indemnity should not be invoked by this case. Our comments follow.

1. Contrary to your conclusion that it is evident that the claims against MIT arise from a "nuclear incident" and thus are subject to indemnity, we find substantial cumulative evidence that Congress never intended the term "nuclear incident" to cover the activities on which plaintiffs based this lawsuit. Plaintiffs' claims allegedly resulted from actions in a doctor-patient relationship in which NRC did not participate and the licensed nuclear reactor performed without incident and without unplanned releases of radioactivity and where government standards for occupational releases on site were not exceeded or not applicable. But the interest of Congress in enacting Price-Anderson liability provisions was to deal with such reactor accidents, malfunctions and the like, that were essentially uninsurable, the very occurrences that are not at issue in this case.

It is telling that in the myriad pages of legislative history replete with references to reactor accidents or nuclear incidents (the terms used interchangeably), runaway reactors, sabotaged reactors, accidents of terrorism, excessive releases, and the like, we have found no suggestion (nor have you referenced one) to show that Congress anticipated the kind of liability coverage that your client now seeks. From the outset of the Senate Report which you cite it is obvious that the original Price-Anderson amendment to the Atomic Energy Act was to provide government indemnity and grant limitation of liability for persons in the atomic energy program from liabilities arising from the operation of nuclear reactors in the nuclear energy program. Senate Rep. No. 296, 1957 U.S. Code Congressional & Admin. News 1803.

Congress's basic approach was to examine "the need to protect the public", and Congress saw the product not as "insurance", but as "indemnification" in the case of a "runaway reactor." See id. at 1810, 1811-13. Congress relied on a program of close and careful

regulation of reactor safety to assure that indemnification would not be costly. See id. at 1828. Congress did not, nor could it have had in mind, the type of medical application in question, with its possibilities for misdiagnosis, misapplication or other malpractice, else it could not have cited with confidence a Commission finding "that the most pessimistic of the probabilities would be less than 1 chance in 50 million of any one person getting killed in any year in a reactor incident." Id. at 1804 (emphasis added).

In sum, the Price-Anderson liability system did not cast the government as insurer for personal harms from medical administrations or from medical treatments without informed consent, but as indemnifier for unexpected but possible public dangers associated with the operation of nuclear reactors or materials used to fuel them.

2. We disagree with your criticism of the result in *In Re Cincinnati Radiation Litigation*, 874 F. Supp. 796 (S.D. Ohio, 1995). The *Cincinnati Radiation* court correctly drew the basic distinction between intentional medical exposures and incidental exposures resulting from nuclear activities which are part of the energy program. Medical exposures for allegedly therapeutic reasons are unrelated to the nuclear energy program or the operation of a reactor as such. Such exposures are not "nuclear incidents." Both Congress and NRC have rejected proposals to cover such exposures under the Price-Anderson liability system. What is covered are exposures suffered as a result of nuclear accidents or releases related to malfunctions of reactors or to releases of radiation, whether intended or otherwise. These can properly be related to an aspect of the nuclear power fuel cycle. In that regard, it is notable that the series of cases you point to for the proposition that intentional exposures are covered are all distinguishable from the instant cases on the ground that the former are all occupational exposures.

In our view, then, injury to patients deliberately exposed to radiation would be covered by the Price Anderson liability system only if their injury were due to an explosion or other nuclear incident occurring at the MIT reactor while those patients were present for BNCT therapy, for example. Absent such a nuclear incident, Price-Anderson would not be available to limit liability or indemnify the medical program administered.

3. We note that no finding of an extraordinary nuclear occurrence has been made and thus no waiver of any applicable state statute of limitations has been required. It is therefore possible that any liability that may be currently incurred with respect to the alleged nuclear exposures would be time-barred but for a tolling of the limitations statute. Such a tolling presumably would occur only because of some form of fraudulent concealment. We are aware of no suggestion or possibility that NRC would be implicated in such a fraud. It is hardly imaginable that Congress would have intended to use government funds to insure against the consequences of private fraudulent activity.

In addition to the statute of limitations point, we are concerned that this office was not alerted to the dispute on removal to federal jurisdiction at the inception of this case. But in light of the position we take on indemnification, we have not explored any possible legal

implications of either of these circumstances. We certainly do not agree that any Price-Anderson Act jurisdictional ruling binds the government to recognize indemnification claims.

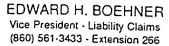
Sincerely,

Marjorie S. Nordlinger

cc: P. Glynn, DOJ

J. Sweeney, DOE

EXHIBIT E





September 19, 1996

Francis C. Lynch, Esq. Palmer and Dodge One Beacon Street Boston. MA 02108-3190

Re: Heinrich, et al. v. MIT, et al.

Policy No. MF-11

Dear Mr. Lynch:

MAELU has completed its investigation into the potential sources of financial protection available to MIT, including federal indemnity, on the claims presented in the <u>Heinrich</u> action. On the basis of the information submitted to us, we conclude that MIT is entitled to a defense under the Facility Form and payable subject to the limit of liability applicable to educational institution research reactors licensed pursuant to the terms of Section 170 Subsection k of the Atomic Energy Act of 1954. That limit for public liability and legal transaction costs arising from licensed reactor activity is \$250,000. Consistent with the terms of endorsement 27 to the Facility Form relating to federal indemnity and Condition 12 relating to other insurance, coverage under the Facility Form for bodily injury, as defined, in amounts above \$250,000 is either excluded or excess of such financial protection.

Payment of defense costs are subject to all terms and conditions of the policy. In addition, MAELU reserves a right to reimbursement of costs paid to MIT for its defense in the event AEC contracts that provide financial protection for liability arising out of the Boron Neutron Capture Therapy (BNCT) are discovered. Ms. Taylor's letter of September 4, on which you were copied, reports that DOE's search for contracts between it or any predecessor agency and the MIT has not been fruitful. This result may not be conclusive, however, on the issue presented here, according to the allegations in the Complaint. Specifically, plaintiffs plead that the defendants acted in concert (joint enterprise), with AEC funding and oversight, to conduct human medical experiments utilizing BNCT at Brookhaven, a national laboratory, throughout the 1950s pursuant to a proposal submitted to the AEC in the late 1940s. These events precede the inception of the MAELU policy. BNCT procedures were later performed at MIT during 1960 and 1961. The class certification sought by plaintiffs extends to all persons as part of the BNCT experiments from 1948 until 1964. On these facts, MIT might be a person indemnified under a federal contract between the AEC and other parties named in the Complaint.



Francis C. Lynch, Esq. September 19, 1996 Page 2

If the conditions for MAELU's assumption of MIT's defense are acceptable, we can then address the retention of your firm and the status of the case. At that time, it will be necessary to review the contents of MIT's defense that has been provided to date.

I await your acknowledgement of our decision.

Very truly yours

Edward H. Boehner
Vice President, Liability Claims

EHB/mbt

cc: Thomas R. Henneberry
Director, Insurance and Legal Affairs
Massachusetts Institute of Technology
Room 4-104, 77 Massachusetts Ave.

Cambridge, MA 02139-4307

Ira P. Dinitz
Indemnity Specialist
Office of Nuclear Reactor Regulations
Mail Stop 11D23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Marjorie S. Nordlinger Senior Attorney U.S. Nuclear Regulatory Commission Mail Stop OWFN15B18 Washington, D.C. 20555-0001

James Toomey MAERP Reinsurance Association 330 N. Wabash, Suite 2600 Chicago, IL 60611

EXHIBIT F

PALMER & DODGE LLP

One Beacon Street, Boston, MA 02108-3190

FRANCIS C. LYNCH (617) 573-0320 flynch@palmerdodge.com

TELEPHONE: (617) 573-0100 FACSIMILE: (617) 227-4420

March 26, 1999

Marjorie S. Nordlinger, Esq.
Office of the General Counsel
United States Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Re: Heinrich, et al. v. Sweet, et al., United States District Court for the District of Massachusetts, Civil Action No. 97-CIV-12134-MLW

Dear Marjorie:

I am writing to provide notice to the United States Nuclear Regulatory Commission ("NRC") that it is currently under an obligation to indemnify the Massachusetts Institute of Technology ("MIT") in the above-referenced lawsuit.

As you are aware, MIT on November 8, 1995 provided the NRC with notice that a claim was filed against it in this case, which was then pending in the United States District Court for the Eastern District of New York. MIT asserted in correspondence with you that the claims in this case are within the scope of Indemnity Agreement E-39, entered into by and between MIT and the Atomic Energy Commission effective June 9, 1958 (the "Agreement").

The Agreement provides that the government is obligated to indemnify and hold harmless MIT for the "reasonable costs of investigating, settling and defending claims for public liability" for a nuclear incident where the reasonable costs "in the aggregate exceed \$250,000." See Agreement, Article III, para. 3 and 4(a). With respect to this case, MIT has exhausted its \$250,000 insurance coverage provided by Mutual Atomic Energy Underwriters for licensed research reactors operated by non-profit educational institutions. MIT's satisfaction of the first \$250,000 of reasonable costs triggers the government's obligation to indemnify MIT.

As the NRC noted In the Matter of Regents of the University of California, 45 N.R.C. 358, 364 (1997), "the Price-Anderson Act contemplates that at the point where governmental indemnity arises, here at the \$250,000 threshold, the licensee will offer the government the opportunity to take over defense of the claims and manage the lawsuit." In accordance with the NRC's construction of Price-Anderson in the Regents case, MIT hereby "tenders" the case to the NRC.

The Hathaway Amendment, 42 U.S.C. § 2210(h), does not bar the NRC from paying MIT's legal expenses, given the current status of this case. To the extent that the Hathaway

Marjorie S. Nordlinger, Esq. March 26, 1999 Page 2

Amendment is applicable to this case, it only prohibits reimbursement of "reasonable expenses" incurred in connection with an NRC-approved settlement. 42 U.S.C. § 2210(h). Furthermore, the NRC has acknowledged that 42 U.S.C. § 2210(k) covers legal costs "in the absence of a settlement." Regents, 45 N.R.C. 364 n.4. MIT's legal costs at this juncture relate to its defense of the case on the merits.

Since MIT last corresponded with the NRC in 1996, the case has been transferred from the United States District Court in the Eastern District of New York to the District of Massachusetts. The plaintiffs filed a second amended complaint, copy enclosed, that added a new plaintiff and substituted two defendants. MIT filed a motion to dismiss for failure to state a claim. Argument on the motion took place on March 18, 1999, and the Court took the motion under advisement, while permitting defendants further briefing on the Bivins claim.

To assist in your review of this case, I have also enclosed copies of the following motions and supporting memoranda filed by MIT:

- 1. Massachusetts Institute of Technology's Motion to Dismiss Plaintiffs' Second Amended Complaint for Failure to State a Claim;
- 2. Massachusetts Institute of Technology's Memorandum of Law in Support of Its-Motion to Dismiss Plaintiffs' Second Amended Complaint for Failure to State a Claim;
- 3. Plaintiffs' Combined Opposition to (1) Brookhaven Defendants' Motion to Dismiss the Second Amended Complaint; (2) MIT's Motion to Dismiss Plaintiffs' Second Amended Complaint for Failure to State a Claim; (3) Motion of Defendants Sweet and Massachusetts General Hospital to Dismiss Claims in Plaintiffs' Second Amended Complaint and (4) Motion of Defendants Sweet and Massachusetts General Hospital for Judgment on the Pleadings; and
- 4. Massachusetts Institute of Technology's Reply in Support of Its Motion to Dismiss Plaintiff's Second Amended Complaint for Failure to State a Claim.

21's given to J. Swope + HANGE NOOUTE 2/2/CE

Sincerely,

Francis C. Lynch

Francis (. Lynch mom)

FCL/ram
Enclosures

EXHIBIT G



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

May 4, 1999

Francis C. Lynch, Esq. Palmer & Dodge LLP One Beacon Street Boston, MA 02108-3190

Re: *Heinrich et al. v. Sweet, et al.*, United States District Court for the District of Massachusetts, Civil Action No. 97-CIV-12134-MLW

Dear Fran:

Your letter, dated March 26, 1999, states your conclusion that the United States Nuclear Regulatory Commission (NRC) is currently obliged to indemnify the Massachusetts Institute of Technology (MIT) in *Heinrich v. Sweet*, referenced above. On that basis, you tendered the defense of that case to us.

Specifically, you recalled for us that on November 8, 1995, MIT provided to the NRC notice of the lawsuit, and that, in further correspondence with us, MIT asserted that the claims in this case are within the scope of Indemnity Agreement E-39 between MIT and the Atomic Energy Commission, to whose regulatory and licensing responsibilities NRC succeeded. Also, you reported that MIT had exhausted its \$250,000 insurance coverage solely on legal fees, an event you assert to be the trigger for the government's obligation to indemnify MIT. You then pursue argument directed to distinguishing MIT's claims from those unsuccessfully asserted by UCLA and rejected by the Commission itself. See *In the Matter of Regents of the University of California*, 45 NRC 358 (1997).

We need not consider whether the distinctions you assert, if substantiated, would justify a finding now that MIT has met the statutory threshold for non profit reactors, i.e., "public liability in excess of \$250,000." 42 U.S.C. 2210(k). This is so because, as you will recall, our 1996 correspondence ended with my August 29, 1996, letter affirming our opinion that Congress did not intend the mandatory Price-Anderson liability provisions for reactor incidents to include in their scope activities involving prescription of radiation doses within a doctor-patient relationship. To our knowledge, nothing has changed factually or materially that would cause us to alter that conclusion, nor did your recent letter provide us any reason to believe otherwise.

In that light, we believe your tender was mistaken and we decline it. I regret that I cannot be more helpful in this regard; however, if I can otherwise be of any assistance to you, please do not hesitate to call on me.

Sincerely,

Marjorie S. Nordlinger

Senior Attorney

EXHIBIT H

GALLAGHER & GALLAGHER, P.C. ATTORNEYS AT LAW 120 2ND AVENUE BOSTON, MASSACHUSETTS 02129-

(617) 241-8800 Facsimili: (617) 241-7692

OWEN GALLAGHER

DIRECT DIAL: 617-598-3801

August 28, 1999

Certified Mail Return Receipt Requested

Marjorie S. Nordlinger Senior Attorney Office of the General Counsel United States Nuclear Regulatory Commission Washington, DC 20555-0001

RE: Heinrich et al. v. Sweet, et al., United States District Court for the District of Massachusetts, Civil Action Number: 97-CIV-12134-WGY; Notice of Decision relating to the application of the Price-Anderson Act.

Dear Attorney Nordlinger:

Please find enclosed a copy of the "Memorandum and Order" of Judge Young in the above matter dated August 16, 1999. This Memorandum deals in part with the allowance of Massachusetts Institute of Technology's (M.I.T.) motion for summary judgment under the Price-Anderson Act that was filed and argued by my predecessor counsel, Francis C. Lynch, Esq., of the firm of Palmer & Dodge.

Your office has previously been notified of the pendency of the above action and the position of the Massachusetts Institute of Technology (M.I.T.) that some or all of the claims are subject to Indemnity Agreement E-39. In particular, your attention is directed to your letter of May 4, 1999, to Mr. Lynch.

I do understand that the instant ruling by Judge Young as to the applicability of the Price-Anderson Act to particular claims in this action is not dispositive of the indemnity claim existing between M.I.T. and the Nuclear Regulatory Commission (NRC), as successor in interest to the Atomic Energy Commission.

However, notwithstanding Judge Young's careful attention to avoid prejudicing the rights of the NRC in this proceeding, I suggest that his reasoning in concluding that Price-Anderson applies, warrants your agency reassessing and reconsidering its legal responsibilities vis-a-vis M.I.T.

See Memorandum p. 23.

For example, the assertion and reference in your letter of May 4, 1999, as to Congress' intent relating to radiation doses within the doctor-patient relationship, was argued by the plaintiffs in this case and the judge found the argument wanting. Certainly, I understand that under Judge Young's ruling the NRC may contest this issue anew. However, a jury is going to be impaneled in this case on Tuesday, September 7, 1999. Thereafter, the action will be tried to a verdict. The demands made by plaintiffs' counsel in this case are substantial, to say the least. A fair reading of Judge Young's reasoning would lead one to believe that the NRC may well be become ultimately responsible for any adverse verdict against M.I.T.

Therefore, without prejudice to the claims and rights of M.I.T., I am willing to cooperate with you to protect those interests that are common to M.I.T. and the NRC. Since I understand that you may not initially wish to involve your agency in the defense of this case, without more information, I suggest, again without waiving any claims or rights of M.I.T., that you might wish to consider contacting and consulting with the Justice Department attorney presently representing the United States in this action:

Burke M. Wong, Esq.
U.S. Department of Justice
Torts Branch, Civil Division
1331 Pennsylvania Avenue, NW - Rm. 8216 North
Washington, DC 20014
Tel: 202-616-4447 Fax: 202-616-4989

But, based upon Judge Young's reasoning in the Memorandum, and incorporating by reference, all prior notices and tenders that were previously proffered to you in this matter, I am formally renewing the request of M.I.T., that it be defended and indemnified pursuant to the terms and conditions of Indemnity Agreement E-39.

This request for indemnity is without prejudice to any other indemnities or rights, whether express or implied, direct or indirect, that M.I.T. may have against the Nuclear Regulatory Commission or any other person or entity. Any and all such indemnities or rights are expressly reserved. Thank you.

Very truly yours.

Owen Gallagher

OGALLAGHER@GALLAGHERLAW.COM

Enclosure (102 page Memorandum and Order)

cc: Burke Wong, Esq.

Francis C. Lynch, Esq.

.08/28/1999

See Memorandum, p. 22, fn.1.